

WHAT IS CLAIMED IS:

1. A method of performing signal conditioning of I/O discretes between a legacy system and a distributed control system comprising:
 - determining at least one conditioning operation that must be performed on a discrete;
 - manufacturing a circuit card comprising at least one circuit performing the determined conditioning operation on the discrete; and
 - installing the circuit card between the legacy system and the control system.
2. The method of performing signal conditioning of claim 1, wherein the step of determining at least one conditioning operation further comprises designating a monitor, an interrupt, an interrupt on demand, an over-ride, or a pass-through function.
3. The method of claim 1, the step of installing the circuit card between the legacy system and the control system further comprising installing the circuit card in a legacy controller.
4. The method of performing signal conditioning of claim 1, wherein the legacy system and the control system are part of a mail sortation system.
5. A control system comprising:
 - a discrete signal source that transmits discrete signals;
 - a circuit card assembly connected to the discrete signal source comprising pre-determined signal conditioning circuitry that receives the discrete signal from the discrete signal source, conditions the discrete signal with the pre-determined signal conditioning circuitry, and transmits a conditioned discrete signal; and
 - a processing component, connected to said circuit card assembly, comprising hardware that receives the conditioned discrete from the circuit card assembly, and

memory storing logic instructions for processing the conditioned discrete signal and generating a control function.

6. The control system of claim 5, wherein the pre-determined signal conditioning circuitry is selected for the group consisting of monitor, interrupt, interrupt on demand, over-ride, or pass-through circuits.

7. The control system of claim 5 further comprising:
a hardware connection to the processing component; and
at least one distributed controller;

wherein the hardware connection receives the control function from the processing component and transmits the control output to the at least one controller.

8. The control system of claim 8 wherein the hardware connection is selected from the group consisting of: a common buss, a network connection, a FieldBUS, or hard-wired connections.

9. The control system of claim 5, wherein the control system controls a portion of a mail sortation system.

10. A circuit card assembly for receiving or transmitting discrete signals from a legacy system, conditioning discrete signals, and transmitting conditioned signals to a distributed system comprising:

a plurality of legacy system connections, each legacy system connection receiving or transmitting discrete signals from or to a legacy system;

a plurality of corresponding conditioning circuits, each conditioning circuit electrically joined to its corresponding legacy system connection, wherein said conditioning circuit processes a discrete to form a conditioned signal according to its structure; and

a plurality of distributed system connections electronically joined to said plurality of conditioning circuits;

wherein the discrete signal from the legacy system enters the circuit card assembly through the legacy system connection, the discrete signal is transmitted to its corresponding conditioning circuit through the legacy system connection, the conditioning circuit conditions the discrete signal according to its structure forming a conditioned signal, and the conditioned signal is transmitted through the distributed system connection.

11. The circuit card assembly of claim 10, wherein each of the plurality of conditioning circuits is selected from the group consisting of: a monitor circuit, an interrupt circuit, an interrupt on demand circuit, an over-ride, and a pass-through circuit.

12. The circuit card assembly of claim 10, wherein said plurality of discrete connections is less than 16 discrete connections

13. The circuit card assembly of claim 10, wherein said plurality of discrete connections ranges in number from 1 to 32 discrete connections.

14. The circuit card assembly of claim 10, wherein said plurality of discrete connections is greater than 32 connections.

15. The circuit card assembly of claim 10, wherein the circuit card assembly operates on a 5 to 30 volt, direct current format.

16. The circuit card assembly of claim 10, wherein the circuit card assembly operates on an alternating current format of less than 250 volts.

17. A mail sortation system comprising the circuit card assembly of claim 10.

18. A signal conditioning circuit card for interfacing a legacy I/O system and a distributed I/O system comprising at least one conditioning circuit wherein the conditioning circuit is selected from the group consisting of: a monitor circuit, an

interrupt on demand circuit, an interrupt circuit, an over-ride circuit, or a pass-through circuit.

19. The signal conditioning circuit card of claim 18, wherein the signal conditioning circuit card is a signal conditioning circuit card for a flats mail sortation system.

20. A legacy controller comprising a circuit card assembly for conditioning discrete signals and providing conditioned discrete signals to a distributed control system.

21. A mail sortation system comprising the legacy controller of claim 20.